

COLUMBIA RIVER TREATY

AGREEMENT

on

SPECIAL OPERATING PROGRAM FOR CANADIAN STORAGE

DURING PERIOD 1 APRIL 1968 THROUGH 30 JUNE 1969

The Arrow project will be completed sufficiently ahead of schedule to permit closure and operation of partial storage for power purposes in the operating year 1968-69. It is scheduled to become fully operative for flood control in December 1968. The Canadian Entity and the United States Entity agree that during the period 1 April 1968 through 30 June 1969 the Canadian storage will be operated in accordance with the attached "Special Operating Program for Canadian Storage During Period 1 April 1968 Through 30 June 1969," dated February 26, 1968.

H. L. Keenleyside
H. L. Keenleyside
Chairman
British Columbia Hydro and
Power Authority
Canadian Entity

H. R. Richmond
H. R. Richmond
Chairman
United States Entity

29. Feb. 1968.
(Date signed)

2/29/68
(Date signed)

26 February 1968

COLUMBIA RIVER TREATY

SPECIAL OPERATING PROGRAM FOR CANADIAN STORAGE
DURING THE PERIOD 1 APRIL 1968 THROUGH 30 JUNE 1969

1. INTRODUCTION

Prior to 1 April 1968, the Canadian Storage is to be operated in accordance with the "Special Operating Program for the Duncan Reservoir for the Period April 30, 1967 through March 31, 1968," agreed by the Governments of Canada and the United States through an Exchange of Notes dated 8 and 18 May 1967.

The Arrow project will be completed sufficiently to permit closure and operation of partial storage for power purposes in the operating year 1968-69. It is scheduled to become fully operative for flood control by about 15 December 1968. The Canadian and United States Entities agree that, during the period 1 April 1968 through 30 June 1969, the Canadian Storage will be operated in accordance with this Special Operating Program; and agree that a predetermined share of downstream power benefits will be delivered to the Canadian Entity as described herein.

2. REFERENCES

The Canadian and United States Entities have agreed on the following related documents:

- (a) "Principles and Procedures for the Preparation and Use of Hydroelectric Operating Plans for Canadian Treaty Storage," dated July 25, 1967, hereinafter referred to as the "Principles and Procedures;"
- (b) "Special Operating Plan for Duncan Reservoir during the Period 1 August 1967 through 31 July 1968," dated 5 December 1967, hereinafter referred to as the "Special Operating Plan for Duncan;"
- (c) "Interim Flood Control Operating Plan for Duncan Reservoir 1967-68," dated 8 December 1967, hereinafter referred to as the "Flood Control Plan for Duncan;"
- (d) "Program for Initial Filling of Arrow Reservoir Fully Operative April 1, 1969," dated July 26, 1967, hereinafter referred to as the "Program for Initial Filling of Arrow."

In addition, it is expected the Entities will have agreed to the Flood Control Operating Plan for Columbia River Treaty Storage by 1 September 1968, hereinafter referred to as the "Flood Control Operating Plan."

3. DUNCAN RESERVOIR

(a) Operating Rule Curve

For the period 1 April 1968 through 31 July 1968, the Operating Rule Curve for Duncan storage will be that developed for the Special Operating Plan for Duncan.

For the period 1 August 1968 through 30 June 1969, an Operating Rule Curve will be developed for Duncan storage in accordance with the Principles and Procedures. The Entities will agree on the Critical Rule Curve for this operating year by 1 July 1968, and on the Assured Refill Curve and the procedures to develop Variable Refill Curves by 1 September 1968.

(b) Flood Control Operating Rules

Flood control operating rules for the Duncan Reservoir for 1967-68 will be established in accordance with the Flood Control Plan for Duncan. The operating rules for 1968-69 will be established in accordance with the Flood Control Operating Plan.

4. ARROW RESERVOIR

On or about 1 February 1968, closure will be made of the earth-fill portion of the Arrow dam and water will be diverted through the discharge works of the dam. The top elevation of the earth dam at that time will be about 1380 feet, and it is scheduled to be constructed to 1410 feet by 1 April 1968. Construction to the full crest elevation of 1459 feet is scheduled to be completed by 1 July 1968. Until the flood hazard of the 1968 flood is passed, the natural flows less any involuntary storage will be passed through the 8 low-level ports and over uncompleted rollways of the 3 sluiceways and the completed rollway of the fourth. Construction of the remaining uncompleted rollways and the control works are scheduled for completion by 15 December 1968.

When the flood hazard has passed and after consultation with the U. S. Entity, the Canadian Entity at its discretion will install stoplogs in the uncompleted sluiceways and will operate the reservoir by controlling flows through the 8 low-level ports with the objective of attaining a water surface elevation of 1404 feet in Lower Arrow Lake by 31 July 1968. If storage content to this elevation has not been attained by 31 July 1968, any filling during August will be as agreed by the Entities.

During the 1968 flood the Canadian Entity will use its best effort to preclude adding to the flood hazard downstream from Arrow reservoir.

Arrow will become partially operative for power purposes under this Special Operating Program commencing 1 August 1968, and until 1 April 1969 will be operated for power with a storage content not to exceed that of elevation 1404 feet except as provided under subsection (e) below.

Under present scheduling, Arrow will be made fully operative for flood control in accordance with the Treaty as soon as possible and presently expected to be about 15 December 1968.

(a) Operating Rule Curve

For the period 1 August 1968 through 31 March 1969, an Operating Rule Curve will be developed in accordance with the Principles and Procedures. The Entities will agree on the Critical Rule Curve for this period by 1 July 1968, and on the Assured Refill Curve by 1 September 1968.

For the period 1 April 1969 through 30 June 1969, the Operating Rule Curve for Arrow storage will be the same as that developed in accordance with the Program for Initial Filling of Arrow. The Entities will agree on the requirements for this Operating Rule Curve by 1 September 1968.

(b) Flood Control Operating Rules

Flood control operating rules for the Arrow Reservoir for 1968-69 will be established in accordance with the Flood Control Operating Plan.

(c) Canadian Share of Downstream Power Benefits

As a result of the operation of Arrow Reservoir under this Special Operating Program, power benefits will result at hydroelectric plants downstream in the United States. The Entities are agreed, subject to the Arrow Reservoir being filled to elevation 1404 feet prior to 1 September 1968, that the Canadian Share of these power benefits after allowing 5% transmission losses on capacity and energy to the United States - Canadian border is 158 mw of firm capacity and 86 average mw of energy during the period 1 April 1968 through 31 March 1969.

(d) Adjustment of Canadian Share for Storage Content below elevation 1404 feet

If the storage content of Arrow Reservoir has not reached a controlled elevation of 1404 feet in Lower Arrow Lake prior to 1 September 1968, the Canadian Share of the downstream capacity and energy benefit will, if desired by either party, be

redetermined for the maximum controlled storage content attained in a manner consistent with the original determination and adjusted at 1 September 1968 to the redetermined amounts. The redetermined energy share during the period 1 September 1968 through 31 March 1969 will be further adjusted to reflect any over-delivery made in the period 1 April through 31 August 1968; provided however, if any over-delivery in the period 1 April 1968 through 31 August 1968 was made from surplus United States energy, such over-delivery will, at the request of the Canadian Entity, be transferred at the appropriate rate to the credit of the Bonneville Power Administrator in the exchange energy account between British Columbia Hydro and Power Authority and the Bonneville Power Administrator, and will be excluded from the further adjustment described above.

(e) Additional Energy Benefit from Storage Content above elevation 1404 feet

If, by agreement of the Entities, controlled storage content above elevation 1404 feet has been achieved by 1 September 1968, energy in addition to the Canadian Share in amounts agreed by the Entities will be delivered to Canada.

(f) Delivery of Canadian Share

Commencing 1 April 1968, and continuing until 31 March 1969, the Bonneville Power Administrator shall deliver at Blaine, Washington, to the B. C. Hydro and Power Authority the Canadian Share. The Canadian Share of energy shall be delivered in weekly

amounts as scheduled by the B. C. Hydro and Power Authority in the amounts of 102 average mw during the period 1 April 1968 through 31 October 1968 and 86 average mw during the period 1 November 1968 through 31 March 1969. The capacity benefits will be 158 mw during the period 1 April 1968 through 31 October 1968 and 110 mw during the period 1 November 1968 through 31 March 1969. If the Canadian Share is reduced in accordance with subsection 4(d), the delivery of the Canadian Share will be adjusted to reflect such reduction. Further exchange of the Canadian Share of energy and capacity benefits may be made as agreed by the Entities.

The wheeling charge to be paid by the B. C. Hydro and Power Authority to the Bonneville Power Administrator for delivery of the Canadian Share in each month will be 0.237 dollars (U.S.) per kilowatt multiplied by the maximum hourly rate in kilowatts at which delivery at Blaine of the Canadian Share is scheduled in that month.

(g) Delayed Deliveries

If deliveries of energy are delayed due to uncontrollable forces or scheduled facility outage, such deliveries shall be made at a time and at a rate agreed by the Entities.

5. OPERATIONS

During the period 1 April 1968 through 31 July 1968, the Duncan Reservoir will be operated for power purposes in accordance with the

Special Operating Plan for Duncan and for flood control purposes in accordance with the Flood Control Plan for Duncan.

For the period 1 August 1968 through 30 June 1969, an Operating Rule Curve for the whole of the Canadian Treaty Storage will be prepared by combining the Operating Rule Curves for Duncan and Arrow Reservoirs and the actual operation of the whole of the Canadian Treaty Storage for power purposes will be guided by this Operating Rule Curve in accordance with Section 22 of the Principles and Procedures.

Flood control operation of the Duncan Reservoir during 1968-69 and of the Arrow Reservoir following Arrow becoming fully operative will be in accordance with the Flood Control Operating Plan.

6. APPLICABILITY OF TREATY

This document is subject to the provisions of the Treaty.

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WESTERN UNION

TELEGRAM

W. P. MARSHALL
CHAIRMAN OF THE BOARD

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PRA009 SSF092 PR LLF026

(TELTEX005)=TELTEX VANCOUVER BC 10 OCT 68=

H R RICHMOND CHAIRMAN UeSc ENTITY

1968 OCT 10 AM 9 26

BONNEVILLE POWER ADMIN= PO BOX 3621 (RTE GD) PORTLAND ORG

=DEAR MR RICHMOND: WITH REFERENCE TO THE EXCHANGES OF NOTES
BETWEEN THE GOVERNMENTS OF CANADA AND THE UNITED STATES ON
THE ARROW PROJECT, AND THE "SPECIAL OPERATING PROGRAM FOR
CANADIAN STORAGE DURING THE PERIOD 1 APRIL 1968 THROUGH 30
JUNE 1969", AGREED UPON BY THE ENTITIES, I AM NOW PLEASED
TO INFORM YOU THAT THE ARROW PROJECT IS OPERATIONAL TODAY.
10 OCTOBER 1968. A COPY OF THIS TELEGRAM HAS BEEN SENT TO
BRIGADIER GENERAL E. P. YATES. YOURS SINCERELY=

H L KEENLEYSIDE CHAIRMAN CANADIAN ENTITY=

WU120

SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE